Chapter Three – Affected Environment

Introduction

This chapter generally describes the natural and cultural resources that may be affected by implementing any of the alternatives. Because it is not known precisely at this time how the lands will be managed, only a brief discussion of the natural and human environment will be presented. When BLM receives applications by prospective owners, it will become clearer what portions of the environment will be affected. At that point, BLM will prepare a site-specific environmental assessment outlining potential impacts and mitigation measures.

Regional Geographic Setting

The parcels affected by the proposed plan are located in six northern Wisconsin counties: Bayfield, Door, Langlade, Oneida, Vilas, and Waupaca (See Map 1). Because of the scattered nature of the properties, it is more appropriate to discuss the affected environment in general terms.

Wisconsin's landscape has been modified by ice and water over the millennia. The glaciers which carved the Great Lakes left behind a landscape filled with thousands of smaller lakes and low rolling hills and plains. Intensive uses of the land include forestry, mining and farming.

The most visible remnants of the glaciers are the Great Lakes themselves. Countless other natural features remain: drumlins, eskers, terminal and lateral moraines, outwash plains and coastal bluffs. Glaciers have created a landscape of low rolling hills, poorly-drained soils and many small lakes.

Northern Wisconsin's climate varies depending on the proximity to Lake Superior and Lake Michigan. Lands closer to the Great Lakes are generally warmer and snowier in the winter and cooler in the spring and summer. The lakes also moderate autumn temperatures. Lands away from the lakes' moderating influences are hotter in the summer, but have somewhat shorter growing seasons. These climatic variances influence vegetation (grasslands to mixed maple-beech hardwoods to northern boreal forests), animal species distribution, agricultural opportunities and recreational pursuits.

Climatic records show that for the affected parcels annual precipitation ranges from 28 to 32 inches. Mean temperatures range from 8.9° F. in January and 67° F. in July in Antigo. On Washington Island in northern Door County, mean temperatures range from 17.4° F. in January to 66.5° F. in July. The growing season averages 89 days in Gordon (near to the Perry Lake parcel) to 142 days on Washington Island (near Plum and Pilot Islands).

The state has over 5 million residents, with the majority located in Milwaukee, Madison, Green Bay and Racine/Kenosha. The state is home to many large manufacturing, finance and insurance companies. Farming is still a significant element to the state's economy.

Wisconsin is a major recreation and tourist destination, especially for visitors from the Chicago area. In the 20th Century, many families have found rural Wisconsin to be ideal for recreational cottages. Many of these cottages can be found in the state's northen lake region. Many people, especially those from the densely populated Milwaukee-Chicago corridor, have also flocked to the Door Peninsula in northeastern Wisconsin. Over the past twenty years, Door County has undergone a rapid change from largely rural to becoming a major tourist destination.

Geology and Mineral Resources

This section will give readers an understanding of the source material for the present day landscape of the region and the potential for economically valuable minerals. This section is not an endorsement of the mineral value of any particular parcel. BLM will prepare a more detailed geologic review as is warranted in the site-specific environmental assessments. The Federal government will retain the mineral rights in the transfers to any non-Federal agency or private sale. Sale of the subsurface estate can be considered in FLPMA, Section 209 sales.

Wisconsin's surface geology is dominated by the remnants of glaciers that scoured the land surface more than 10,000 years ago. At their greatest extent, glaciers covered more than two-thirds of the state. As the glaciers melted, they retreated northward, leaving behind the rock and soil scoured from other areas. These materials formed an unconsolidated mantle over the bedrock, consisting of sediments such as clay and silt, sand, gravel and boulders.

The thickest accumulations of glacial material, known as terminal moraines, were left along the glacial fronts. Terminal moraines consist of unsorted rocks pushed ahead of an ice sheet much as a bulldozer pushes earth in front of its blade. Moraines form curved ridges which mark the greatest extent of the ice sheets. Behind the terminal moraines, till or ground moraine consists of material carried within or atop the ice sheet. Glacial features such as kames, eskers and valley train deposits consist of material sorted by running water and emplaced beneath, along or in front of the retreating ice sheet. These features can be valuable sources of sand, gravel and other rock materials.

The geologic characteristics of the six counties affected by the proposed plan can be grouped into areas with similar physical characteristics, structure, and origin, sometimes referred to as terranes.¹ A general description of these terranes in the planning area follow:

<u>Bayfield County</u>: This northern Wisconsin county is underlain by sedimentary and volcanic rocks of the Mid-Continent Rift. Similar rocks along the Keweenaw Peninsula to the northeast in Michigan's Upper Peninsula are famous for the native copper and associated silver deposits. Although the Keweenawan trend in Wisconsin has been intensively

¹ An extensive discussion of terranes, is beyond the scope of this report. Readers seeking detailed information are referred to the various maps and publications produced by the University of Wisconsin - Extension, Wisconsin Geological Survey.

explored, no deposits of economic significance have been discovered. The volcanic rocks are underlain by igneous intrusive rock, which has been explored for copper, nickel and platinum group metals. To date, no economic deposits have been discovered.

<u>Door County</u>: The Door County peninsula is underlain by Silurian dolomite, with little glacial cover. Mineral deposits are unknown, and gravel development is subordinate to local surface uses.

Northern Langlade, Oneida, Vilas Counties: These counties are covered by thick glacial deposits. The bedrock underlying this glacial material is nearly 2 billion years old and consists of metasediments (Vilas County) and metavolcanics (Oneida County, northem Langlade County). Metasediments are known to host iron deposits, while massive metallic sulfide deposits similar to the Crandon copper deposit are being explored in the metavolcanic areas. The Wisconsin iron formations are no longer of economic interest. (Note: Evaluation of the Crandon mine is a state function; BLM has no authority whatsoever in this mining proposal.)

Southern Langlade County, Northwestern Waupaca County: The bedrock in these areas consists of the 1.5 billion year old "Wolf River" batholith, a quartz monzonite body of great size. Exploration in the area has not revealed important mineral deposits, although interesting mineral occurrences have been found. The rural nature of the area and the thick glacial cover make sand, gravel, crushed stone development local in nature.

<u>Southeastern Waupaca County</u>: Bedrock consists of Cambrian sandstone and dolomite. Mineral deposits are not present, but some local gravel development may occur.

None of the parcels are considered valuable for fluid (oil and gas) minerals.

Soils

Soils for the affected parcels vary significantly. The effects, if any, on soil resources will be discussed in more depth when BLM conducts site-specific environmental assessments.

Water Resources

Surface and groundwater resources on or near or beneath the affected properties will be discussed as appropriate in site-specific environmental assessments prepared for each realty action that will be taken after this plan is approved.

Air Quality

Existing air quality in the areas affected by this proposed plan is generally considered good. Recent studies have indicated that Door County has experienced a dramatic increase in ozone levels to the point where the Federal standard for this pollutant has been exceeded several times during recent summers.

None of the properties is within either Prevention of Significant Deterioration (PSD) Class I or II areas. No air quality monitoring stations are located near to any of the properties, so it is impossible to know precisely the level of airborne pollutants. Reviews will be conducted for each property to determine air quality impacts that may arise from the specific proposed uses of the lands.

Coastal Zone

Under the Coastal Zone Management Act (CZMA) of 1972, BLM is required to ensure that its actions are consistent, to the maximum extent possible, with the State's coastal management plan. Because the Door County properties are within the State's coastal management zone, BLM will consult with the Wisconsin Coastal Management Program after site-specific applications are received to ensure Federal consistency.

Historic and Archaeological Resources

Prior to exploration and settlement by Europeans, the land was used extensively by Native Americans. The major tribes include the Menominee, Ojibwa, Chippewa, Ho-Chunk, Potawatomi, and Oneida. These people used some of the properties affected by the proposed plan. BLM requested that the State Historical Society of Wisconsin (SHSW) review all of the affected parcels for the presence of historic or archaeological resources. The SHSW reported that the Door County island properties (Plum, Pilot and Cana Islands) are in a region known to been used intensively by Native Americans. Village and garden sites and burial grounds are examples of the types of sites that may be present on these parcels.

The SHSW recommends that a qualified archaeologist survey the tracts to locate and evaluate the significance of archaeological sites that may be present prior to transferring the lands out of Federal ownership (Banker, pers. comm. 1999). These surveys would not be required if the lands are transferred to other Federal agencies.

The Plum Island and Pilot Island properties have shipwrecks lying just off-shore. Together, the historical and archaeological resources may make Plum Island, and possibly Pilot Island, eligible as historic districts under the National Historic Preservation Act.

Wetlands/Riparian Resources

Executive Order No. 11990 ("Protection of Wetlands") provides opportunity for early review of Federal agency plans regarding new construction in wetland areas. It also urges all Federal agencies to avoid supporting, assisting, or financing new construction in wetlands unless there is "no practicable alternative." Executive Order No. 11988 ("Floodplain Management") directs Federal agencies to take floodplain management into account when formulating or evaluating water or land use plans. It is applicable to wetlands protection because of the strong interrelationship between wetlands and floodplains (USFWS 1999).

BLM will abide by the provisions contained in these executive orders when analyzing the

impacts of site-specific proposals.

Native American Tribal Concerns

BLM contacted the tribal leaders and historic preservation officers from thirteen Native American tribes to discuss BLM's process for determining the disposition of the affected lands. During this consultation no additional information regarding archaeological or cultural resources was discovered. BLM will contact the tribes again prior to taking site-specific action on the tracts.

Economics

Wisconsin has gross state product in excess of \$300 billion and each affected county generates upwards of \$500 million in goods and services. Given the effects of any decision involving these properties are too small to measure, there will be no description of economics in the proposed plan. Furthermore, impacts would be related to the type and level of development proposed by prospective land managers, which is unknown at this time. Therefore, because of the site-specific nature of economic effects, if any, their analysis will be deferred to the individual environmental assessments.

Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." focuses Federal agencies' attention on the human health and environmental conditions in minority and low-income communities. It requires Federal agencies to adopt strategies to address environmental justice concerns within the context of agency operations. The order is intended to offset the increasing incidents of adverse environmental impact affecting communities which have neither the financial nor the political power to oppose the development which caused it.

A review of U.S. census tract data revealed no minority or low income communities located near the affected parcels.

Reasonably Foreseeable Future Development

Development will vary, depending on who would own a particular parcel. Site-specific plans that accompany individual applications will outline future development of each property. Each proposal will be evaluated against the disposal criteria identified in Chapter Two — Alternatives. BLM will work with applicants to ensure that their proposals meet the standards set in the disposal criteria. BLM will reject plans of development that cannot or will not be amended to protect sensitive resources.

Local Zoning

All but one of the parcels affected by the plan are located adjacent to inland lakes or Lake Michigan. Thus, any future development will be guided and somewhat restricted by shoreland and other zoning ordinances issued by the affected counties. These ordinances generally protect resources by placing setbacks along the shorelands anywhere up to 300 feet from the ordinary high water mark. The ordinances also set specific minimum lot sizes and restrict the cutting of vegetation along lakeshores.

All of the counties have zoning ordinances under authority granted by the State. Counties have zoned the lands within their borders for appropriate use. Prior to approval any discretionary transfer, BLM review the county zoning maps and ordinances to ensure that the proposed disposal conforms with the ordinances.

Parcel Descriptions and Resources by County

BAYFIELD COUNTY

Bayfield County is located in the northwestem part of the state. It is bordered by Douglas, Ashland, and Sawyer Counties, to the west, south and east, respectively. A portion of the northeast part of the county abuts Chequamegon Bay in Lake Superior. Washburn is the county seat. Bayfield is one of Wisconsin's least populated counties with 15,000 residents. The county's economy is based upon the retail trade, manufacturing and agriculture industries.

The Perry Lake property is located two miles south of the Chequamegon National Forest (managed by the USDA, Forest Service) and two miles west of the St. Croix National Scenic Riverway (managed by the National Park Service). The Lake Osborn tract is three miles west of the National Forest boundary and is located within the Town of Grandview.

The State of Wisconsin also manages parks and forests within the county. The Red Cliff Band of the Chippewa Indians reservation is located along the shores of Lake Superior in northern Bayfield County.

Perry Lake: Township 43 North, Range 7 West, Section 17, Lot 11, (16.27 acres) is located in the Crestview Acres Subdivision one-mile northwest of the Town of Cable (Map 2). The 16.27-acre tract has been further subdivided into several lots, which have been considered private land for decades. In 1980, BLM determined that the land never left Federal ownership, thereby creating title conflicts for the permanent residents living there. None of the individuals qualified under the Color-of-Title Act and their claims have been rejected.

Adjacent land use includes farms, residences and recreation.

There are no known hazardous materials located on the tract. Endangered plant and animal species are known to occur in Bayfield County. These include the bald eagle (federally-listed as threatened), the gray wolf (federally-listed as endangered) and Fossett's locoweed (federally-listed as threatened).

Lake Osborn: Lots 8-12, Township 45 North, Range 6 West, Section 33, (62.3 acres) are located in the Town of Grandview in east-central Bayfield County (Map 3). At one time, the tracts were under Color-of-Title Act applications, which were rejected. These low-lying and often wet parcels do not have legal access and are surrounded by private land.

There are no known hazardous materials located on the parcel.

Door County

This peninsula is bounded by Green Bay on its west, Lake Michigan to the east and Portes des Morts (Death's Door) Passage. It is made up of rolling hills and farmland in the interior sections and limestone bluffs along the shorelines.

Door County has 27,000 year-round residents. Tourism boosts population significantly in the summer. Sturgeon Bay, the county seat, is home to over 9,000 people. The top industries in Door County are tourism, retail, manufacturing and construction.

The State maintains several park units in the county and several natural area designations. The four affected parcels are located in northern part of the county.

BLM consultation with the US Fish and Wildlife Service under the Endangered Species Act revealed that several plant and animal species are known to occur in Door County and may use one or more of the parcels in the county. The species known to occur in Door County include the bald eagle, peregrine falcon, dwarf lake iris, Pitcher's thistle and Hine's emerald dragonfly (USFWS 2000).

According to the Wisconsin Sea Grant Institute, there are almost 100 species of fish in Lake Michigan. Lake Michigan is a volatile ecosystem; some species reported from the 1960's have disappeared, and other species which now occur were not reported in the 1970's (Paul Peters, Wisconsin DNR, personal communication, June 5, 2000, and Wisconsin Sea Grant website: http://seagrant.wisc.edu/communications/publications/fish/framefish.html).

Fisheries of Green Bay

Resident fish species utilizing the shoreline areas of the Green Bay side of the Door County Peninsula include smallmouth bass, rock bass, yellow perch, pike, walleye, darters and minnows.

Fisheries of Lake Michigan

Fish occurring in the open waters of the Lake Michigan side of the Door Peninsula include trout and salmon species and trout and salmon-like species (coregonids) e.g., chub, lake herring, whitefish and round whitefish.

Cana Island: Township 30 North, Range 28 East, Section 11, Tract 37, (9.06 acres). Cana Island is located two miles northeast of Baileys Harbor (Map 4). In recent years, a 500-foot long gravel causeway built around 1917 has been uncovered by lowering lake levels. In some years water depth on the causeway has been up to four feet (public comment, Baileys

Harbor workshop, April 1999).

Originally built in 1869, the Cana Island Light was encased in steel in 1901. The lighthouse is listed on the National Register of Historic Places. The State Historical Society of Wisconsin has found no evidence of archaeological potential, either historic or prehistoric on the island (SHSW 1976).

People driving to the area park along Cana Island Road or nearby on Bues Point Road. In 1999, up to 33,000 people visited the island (Gast, pers. comm.) It is unknown how many other visitors go to the end of the road to view the lighthouse or visit after hours. Cana Island Road is the state-designated Rustic Road 38. The surrounding neighborhood is made up of summer cottages and year-round homes. The State of Wisconsin recently purchased land in the area as part of a natural area designation.

Five state special status plant species of concern are found on Cana Island (BER 1999):

Parnassia parviflora (Small-flowered grass-of-parnassus), which is also listed as endangered in the state;

Calypso bulbosa (Calypso orchid);

Calamintha arkansana (low calamine), which may now only occur along Lake Michigan;

Gentianopsis procera (Small fringed gentian); and Primula mistassinica (Bird's eye primrose).

There are no known contaminants on-site. The Wisconsin DNR has recommended that a groundwater use restriction be placed on any deed running with the property (DNR 1999). As of the date of publication of the proposed plan, the Coast Guard has yet to respond to DNR's recommendation.

Eagle Bluff: Township 31 North, Range 27 East, Section 17, NW Fractional Corner; (1.0 acre (Map 5)). One of the first lighthouses in Door County, the Eagle Bluff Lighthouse was built in 1868. This combined lighthouse/keepers quarters is listed on National Register of Historic Places and is considered of local significance.

This lighthouse is located in Peninsula State Park on Green Bay. There are several small restored outbuildings on the property. A parking lot is adjacent to the property which is maintained by the State Park. Given that the lighthouse is within a state park, adjacent land uses are confined to recreation and natural resource protection. The site receives tens of thousand of visitors annually. The site has been maintained by the Door County Historical Society under license from the Coast Guard since the early 1960s.

One State plant species of concern – *Adlumia fungosa* (Allegheny vine) — occurs near the lighthouse in Peninsula State Park. The plant favors rocky and burned over habitats (DNR, 1999). Because the grounds at the lighthouse are landscaped, it is unlikely that this species exists on the site.

There are no known hazardous materials located on the property.

Plum Island: Township 33 North, Range 29 East, Section 26, Lots 1&2; Section 27, Lots 1, 2, and 3 (325 acres (Map 6)). Located in Porte de Morts Straits, this low-lying island lies just south of Washington Island. It was used as the Coast Guard's northern Door lifesaving station until the early 1990s, when the island was abandoned in favor of Washington Island. The rear range light is still operational and is listed on the National Register of Historic Places. Other buildings include the original lighthouse keepers quarters, a fog signal building, the Coast Guard station, a dock and boat house, and the front and rear range lights. The island also has electric and telephone lines crossing it.

The 65-foot tall rear range light was built in 1897 and is sheathed in steel. It still contains the original Fourth Order Fresnel lens. The keeper's quarters, located adjacent to the light, is a brick structure built in 1900. It has recently been re-roofed by the Coast Guard to prevent additional damage to the interior floors and foundation.

The Coast Guard station accommodated the radio, mess and personnel housing functions of the lifesaving station. Although this building is not listed on the National Register, the island contains other cultural and archaeological resources, which may make the entire island eligible as an historic district (SHSW 1999).

The island supports a healthy white tail deer population, which has decimated some of the vegetation. The island is home to the following special status species:

Adlumia fungosa (Allegheny vine);

Orobanche uniflora (One-flower broomape), which prefers mesic woods; Some rare or endangered birds species use the island occasionally, but not for nesting or breeding purposes (BER, 1999).

Plum Island contains a number of State-designated sensitive natural community types, which include:

Moist cliff community, consisting of dolomite cliffs along the shore; Great Lakes beach community, which consists of undisturbed cobblestone beach with rare and endangered plants species not found at other Great Lakes beaches; Northern wet-mesic forest community, which consists of boreal forest predominately sugar maple; and

Southern mesic forest community, which consists of cedars in thin loamy soils on lake bluffs and in meadows (ibid).

Although the Coast Guard has removed all fuel storage tanks and other hazardous materials (fuel and lubricant barrels, batteries), some contamination remains. Clean-up is scheduled for 2003. It is likely that some or all of the buildings contain asbestos, although it is not known whether it can be stabilized (encased) or should be removed.

Pilot Island: Township 32 North, Range 29 East, Section 1, NENW, (3.2 acres). This small island is located in Lake Michigan three miles off the northern tip of the Door Peninsula (Map 7). It is home to hundreds of nesting cormorants and other marine birds. Its permanent dock was destroyed several years ago by storms and ice damage. The island has a combined lighthouse/keepers quarters building and an auxiliary structure which is nearly completely

ruined by the elements.

Originally built in 1858, the Pilot Island beacon and fog signals served mariners faithfully for over a century. The light was decommissioned in 1962 (SHSW 1976). The island is rich in maritime history. During its active life, the island was often enshrouded in fog; the continual fog signal would curdle milk and destroy eggs in their shells. The living conditions drove some keepers mad and at least one took his own life (ibid).

Just off-shore from the island are several shipwrecks dating back to the 19th century (SHSW 1989). The wrecks have been catalogued and are quite popular with divers as the shoals are favorable to diving with all levels of experience. The State considers the area to be one of the most significant shipwreck sites in Lake Michigan.

The island has been largely denuded of vegetation as a result of the cormorant population. One State plant species of concern — *Adlumia fungosa* (Allegheny vine) — has survived the cormorant pressure and occurs on the island (BER, 1999).

LANGLADE COUNTY

Langlade County is located in the northeastern part of the state. The county seat is Antigo, a city with 8,000 residents and the county has approximately 20,000 residents. Retail trade, manufacturing and agriculture are the top employers in the county.

The bald eagle (federally-listed as threatened) and gray wolf (federally-listed as endangered) are known to occur in Langlade County.

Lower Bass Lake: Township 33 North, Range 10 East, Section 25, Lot 17, (1.18 acres). The parcel is a narrow 1.12-acre tract that borders Lower Bass Lake (Map 8). It is located in the Town of Upham, north of Antigo. The surrounding land is county-owned part forest preserve on one side and privately held on the other two upland sides. The parcel was owned by Langlade County until 1997 as part of a larger Recreation and Public Purposes (R+PP) Act conveyance completed by BLM in the early-1960s. The county returned the property to BLM by quit claim deed after it had been asked by an adjacent landowner to purchase the land. Since the county could not sell the parcel under the terms of the R+PP patent, it was returned to BLM for disposition.

The tract has legal (vehicular) access only for the two adjacent private landowners. No special status or threatened or endangered species are known to exist on the parcel (BER 1999). A bald eagle nest is located near the tract (USFWS 2000). Adjacent land use includes residential, forestry and recreation.

There are no known hazardous materials located on the parcel.

Oneida County

Located in the northern part of the state, Oneida County is home to 35,000 residents.

Employment in the county is geared towards the retail trade, health services, manufacturing and construction industries.

The county has many lakes which yearly draw thousands of fishing enthusiasts and other vacationers. Many people use the county to snowmobile in the winter as well.

The county seat of Rhinelander has 7,500 people. Oneida County is home to the Northern Highlands-American Legion State Forest. The forest surrounds the parcels being considered in this proposed plan.

Lily Lake: Township 36 North, Range 8 East, Section 22, Lot 12, (32.47 acres (Map 9)). The parcel is bounded on the south and west by land held in trust by the State of Wisconsin (Paus 1999). The lake has a maximum depth of 26 feet and is home to muskellunge, northern pike, bass and panfish. There is no public access to the lake.

There are no known hazardous materials located on the parcel.

VILAS COUNTY

Situated on the border with Michigan's Upper Peninsula, Vilas County is home to over 21,000 people. Eagle River is the county seat with 1300 residents. Retail trade, construction and health services are the largest employers in the county.

The bald eagle, gray wolf, and Kirtland's warbler (federally-listed as endangered) are known to occur in the county.

Big Lake: Township 43 North, Range 6 East, Section 33, Lots 7 and 8, (56.23 acres (Map 10)). Big Lake is 850 acres in size and has a maximum depth of 65 feet.

The USFWS notes that two eagle nests are located near this tract within the American Legion-Northern Highlands State Forest. The Service further notes that the nests would be protected under DNR bald eagle management guidelines.

Pickerel Lake: The parcel is described as Township 40 North, Range 9 East, Section 4, Lots 8 and 9; (63.66 acres (Map 11). The lake is nearly 300 acres in size and has a maximum depth of 26 feet. Common fish species for both Big Lake and Pickerel Lake includes muskellunge, northern pike, walleye, bass, and panfish.

There are no known hazardous materials located on either of the parcels. No endangered, threatened or special concern species or natural communities are known to occur on or near the affected parcels. (BER 1999).

WAUPACA COUNTY

Over 50,000 people live in Waupaca County. The city of Waupaca is the county seat and has

5,000 residents. Waupaca County's economy is geared towards the retail trade, manufacturing and construction industries.

The bald eagle and Karner blue butterfly (federally-listed as endangered) are known to occur in Waupaca County.

Clintonville: Township 25 North, Range 15 East, Section 2 SW¼NE¼, (40 acres (Map 12)). This parcel is located near Clintonville in the Town of Matteson. No endangered, threatened or special concern species or natural communities are known to exist for this tract or areas nearby (BER 1999).

There are no known hazardous materials located on the parcel.